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WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)			EXAMINER	
CIRA CENTRE, 12TH FLOOR			TRUONG, CAM Y T	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/692,350

Applicant(s)

CUNNINGHAM ET AL.

Examiner

Cam Y T. Truong

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-7, 10-14 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 10-14 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant has amended claims 1-3, 7, 9-12, 14, canceled claims 4, 8 and added claim 25 in the amendment filed on 9/18/2007.

Claims 1-3, 5-7, 9-14 and 25 are pending in this Office Action.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-3, 5-7, 9-14 and 25 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that XML elements within a single XML document - not to the documents themselves and/or document types. Thus, Murthy does not teach or suggest document types, a hierarchy of document types, a path to a document type within such a hierarchy, or a table that includes these values.

In response to applicant's argument, Murthy teaches node types (fig. 5). Nodes are represented as documents. Thus, Murthy teaches nodes types as document types.

Applicant argued that Murthy does not teach or suggest processing a query by accessing the table to determine, for each document, if its associated type path will satisfy the query, and generates query results comprising each type path that satisfies the query.

In response to applicant's argument, Claims are considered in new ground of rejection.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-3, 5-7, 9-14 and 25 are rejected under 35 U.S.C.101 because the language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practice application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

Claims 1-3, 5-7, 9-14 and 25 recite "a computer system". The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

***Claim Objections***

5. Claims 9-14 are objected to because of the following informalities:

Claims 9-14 are dependent on claim 25. Claim 25 is "A computer system".

Thus, the limitation "The hardware/software system" in claims 9-14, should written as "The computer system". Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 5-7, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy (US 20050055355) in view of Shadmon et al (or hereinafter "Shadmon") (US 20050033733).

As to claim 1, Murthy teaches the claimed limitations:

"a data store comprising a table of documents" as a database comprising a table of nodes (not documents) (fig. 5, paragraph 0033),

"each document having an associated document type in a hierarchy of document types" as each node (not document) having a node type in a tree of node types (figs 3C, 4, [0030]);

"each document type having a type path that is a path from a root document type to the document type in the hierarchy of document types" as each node type

have a type path that is a path from the root node type to the node type in the hierarchy types. The node is not document (fig. 3C, [0030]),

"the table comprising each document and its associated type path" as table includes each node and its associated type path (figs. 4-5).

"a document retrieval system that accesses the table in the data store to determine, for each document, if its associated type path will satisfy the query" as accessing nodes (not documents) in the table corresponding to the path a.b.c.d and returns the value of those nodes. The following example Xpath expression searches the content(s) of one or more XML fragments corresponding to the location path /a/b/c/d. The value of those nodes are represented as query results that satisfies the query (paragraphs 0064-0069).

Murthy does not explicitly teach "generates query results comprising each type path that satisfies the query".

Shadmon teaches query processor can follow every path that looks like it might match the query. For example, A.fwdarw.(%)\*.fwdarw.C means "find every C that has an ancestor tagged A." To answer this query, the processor starts by using the prefix key lookup operator to search for the A prefix, and then follows every child of the A prefix node to see if there is a C tag somewhere below. Alternatively, the general prefix key lookup operator could return all children of the A prefix. All children of the A prefix are represented as query results (paragraph 0284).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Shadmon's teaching of teaches query processor can

follow every path that looks like it might match the query. For example, A.fwdarw.(%)\*.fwdarw.C means "find every C that has an ancestor tagged A." To answer this query, the processor starts by using the prefix key lookup operator to search for the A prefix, and then follows every child of the

A prefix node to see if there is a C tag somewhere below. Alternatively, the general prefix key lookup operator could return all children of the A prefix. All children of the A prefix are represented as query results to Murthy's system in order to provide a technique which facilitates text search, path search and browsing in semi-structured documents in general quickly.

As to claims 3 and 10, Murthy teaches the claimed limitation "wherein a document type can be a subtype of another type" as (fig. 4)

As to claim 5, Murthy teaches the claimed limitation "wherein the data store comprises a computed column for storing each type path" as (page 2, [0024]).

As to claims 6 and 13, Murthly teaches the claimed limitations " wherein each type path comprises a variable-length encoded value" as (page 3, [0026]).

As to claims 7 and 14, Murthy teaches the claimed limitations" wherein each variable-length encoded value corresponds to a hierarchy level of the document type of the associated document" as (page 3, paragraph [0026, 0030]).

As to claim 11, Murthy teaches the claimed limitation "wherein each document has an associated type path" as (figs. 4&5, page 4, paragraph [0048, 0040]).

As to claim 12, Murthy teaches each type path belongs to a computed column in the table" (page 2, [0024]).

8. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy in view of Shadmon and further in view of Chau et al (or hereinafter "Chau") (US 6643633).

As to claims 2 and 9, Murthy does not explicitly teach the claimed limitation "wherein each type is a user-defined type (UDT)". Chau teaches user defined types (col. 8, lines 30-35).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Chau's teaching of UDT to Murthy's system in order to provide powerful user-defined function to store and retrieve XML documents in XML columns as well as to extract XML element/attribute values.



9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy (US 20050055355) in view of Wilbanks et al (or hereinafter "Wilbanks") (US 2003/0018616).

As to claim 25, Murthy teaches the claimed limitations:

"a data store comprising a table of documents and pre-computed values" as nodes of a document and document identifiers as values are stored in a table of relational database. Nodes are represented as documents (fig. 2&5, paragraph [0033]),

"the pre-computed values comprising information to discern objects based on type pursuant to a hierarchy search" as the document identifier refers to the document identifier that is assigned to the XML documents. Each XML document will have a unique DOCID value. PID refers a unique identifier for a path. At 220 and 22, hierarchical information and type/value information for the node is stored in the entry for the node in the Path\_table. The hierarchical information for the XML data is tracked by viewing the XML document as a tree. The following example XPath expression searches for the content(s) of one or more XML fragments corresponding to the location path "/a/b/c/d". XPath: /a/b/c/d. The above information shows that each value of each document to identify each document based on a path type to a hierarchical search (page 2, [0025]; page 3, [0030]; page 5, [0064]);

"a document retrieval system that accesses the table in the data store to determine, for each document, if its associated pre-computed value will satisfy the query" as accessing nodes (documents) in the table corresponding to the path a.b.c.d

Art Unit: 2162

and returns the value of those nodes. The following example Xpath expression searches the content(s) of one or more XML fragments corresponding to the location path /a/b/c/d (a, b, c, d) (paragraphs 0064-0069).

Murthy does not teach limitation "generates query results comprising each pre-computed value that satisfies the query".

Wilbanks teaches providing query including path type satisfies the query (fig. 7).

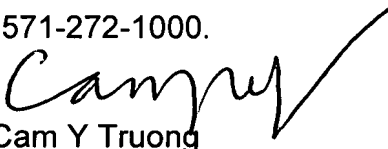
It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Wibank's teaching of providing query results including type path satisfies the query to Murthy's system in order to provide a technique which facilitates text search, path search and browsing in semi-structured documents in general quickly.

**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T. Truong whose telephone number is (571) 272-4042. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Cam Y Truong  
Primary Examiner  
Art Unit 2162

